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Manufacturing with Intel® Pentium® 4 Processor in the µPGA Form Factor

With Reference Design

Part II

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Session Agenda

- Mechanical Features
- **Reference Design**
- Manufacturing Considerations
- Production Logistics

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Intel Reference Design

Reference Design for the Intel® Pentium® 4 Processor in the µPGA Form Factor

Intel has developed a reference design to serve as an enabler for OEM solutions.

- This reference design provides a baseline for OEM thermal solutions.
- OEMs are responsible for all design, sourcing, and validation of components.
- Reference designs for other variations of the Pentium 4 Processor in the µPGA form factor may differ.
- Recommendation of 0.250 inch motherboard to chassis clearance for systems.

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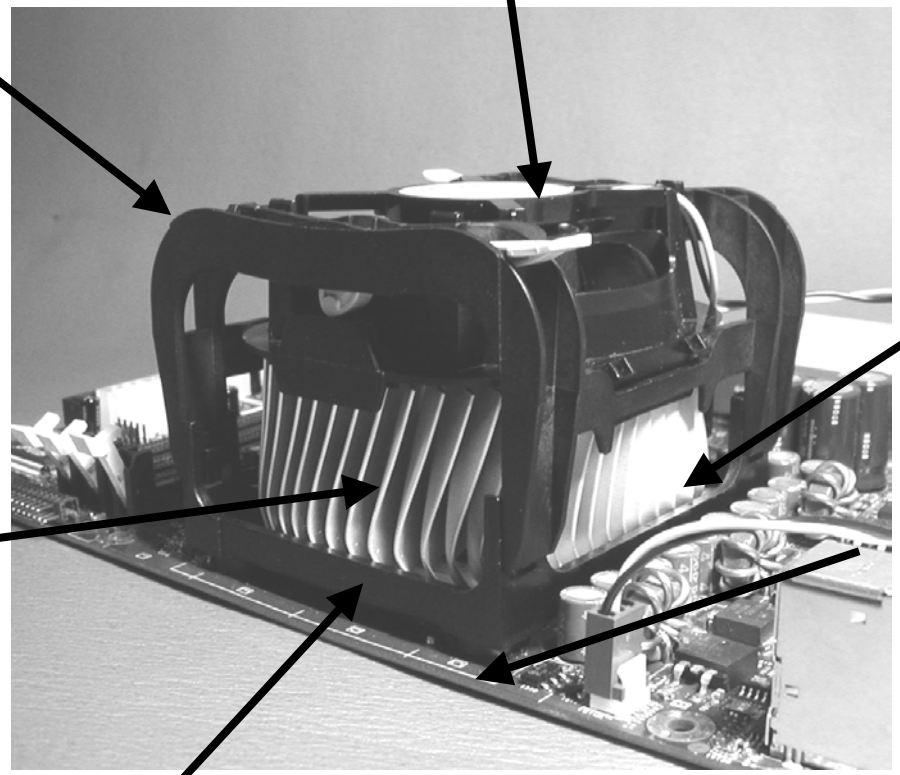
Reference Design for the Intel® Pentium® 4 Processor in the µPGA Form Factor - Continued

Motherboard stiffening devices are not recommended to reduce board flex.

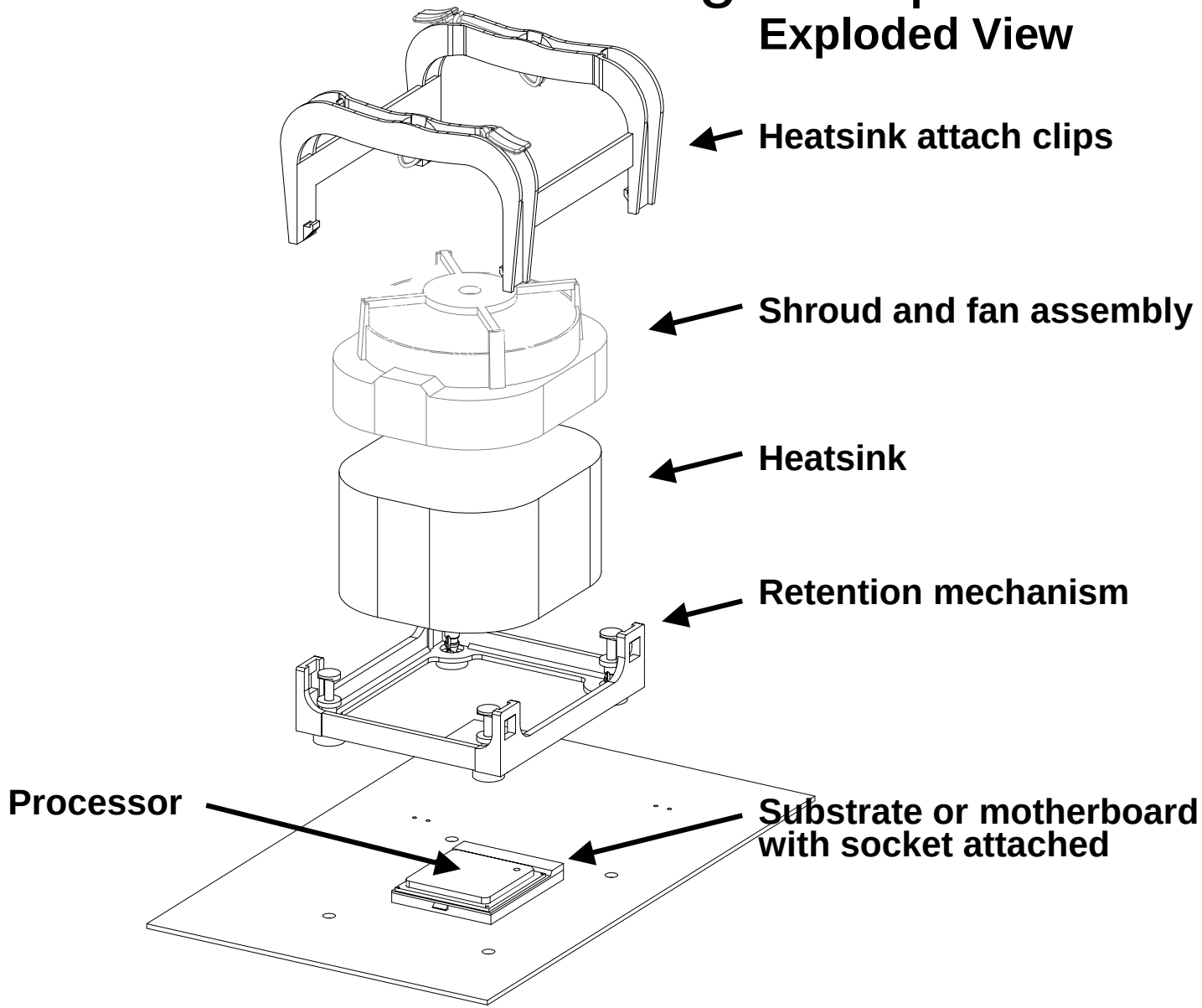
- Reference design assumes board flex:
 - To reduce cost, design does not require stiffening plate.
 - Stiffening plate would dramatically increase the compressive force, which could result in damage to the processor, socket or board.
 - Clip activation is very difficult or impossible with stiffening plate.
 - No validation done with stiffening plate.

Intel® Pentium® 4 Processor in the µPGA Form Factor

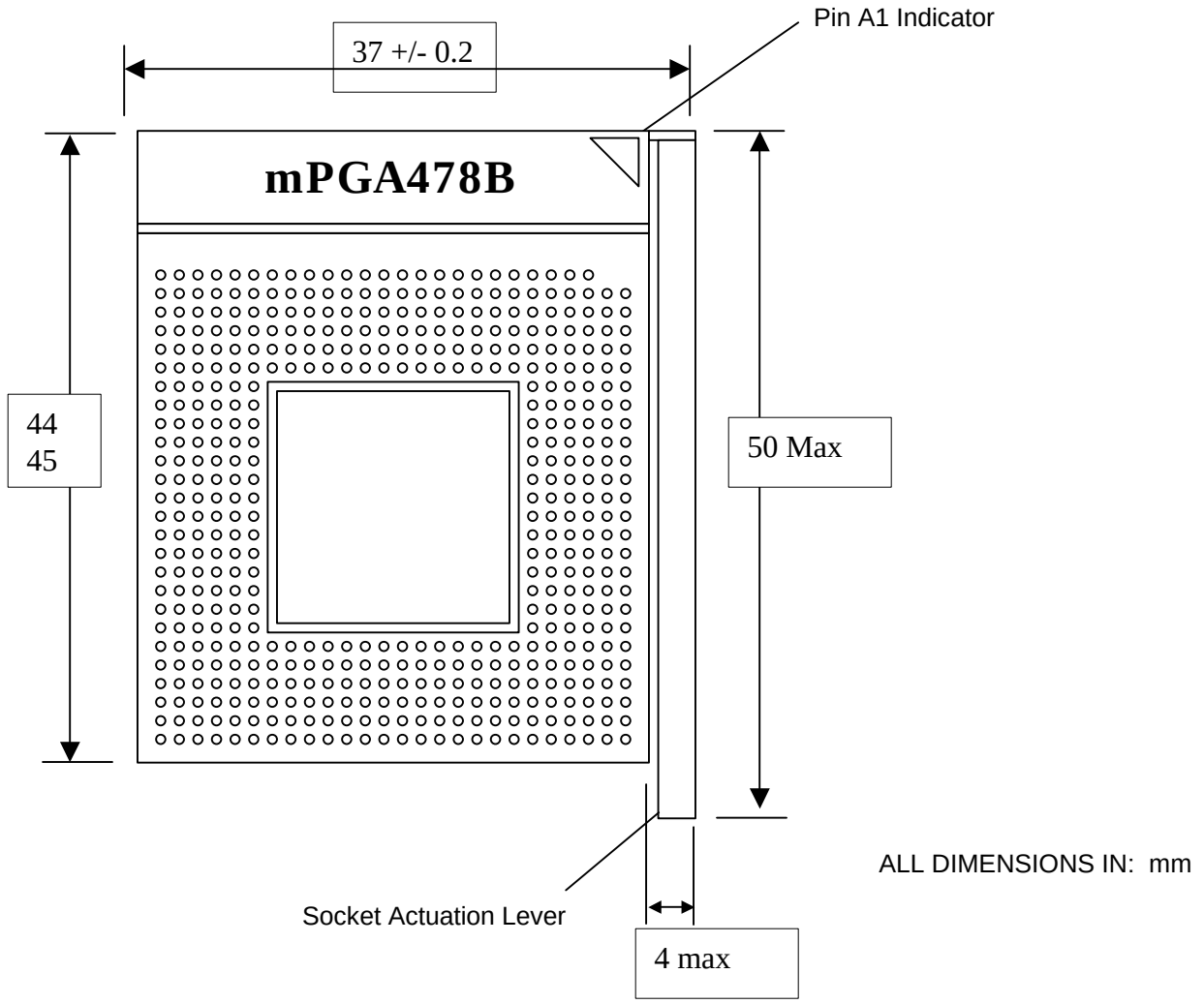
Enabling Components



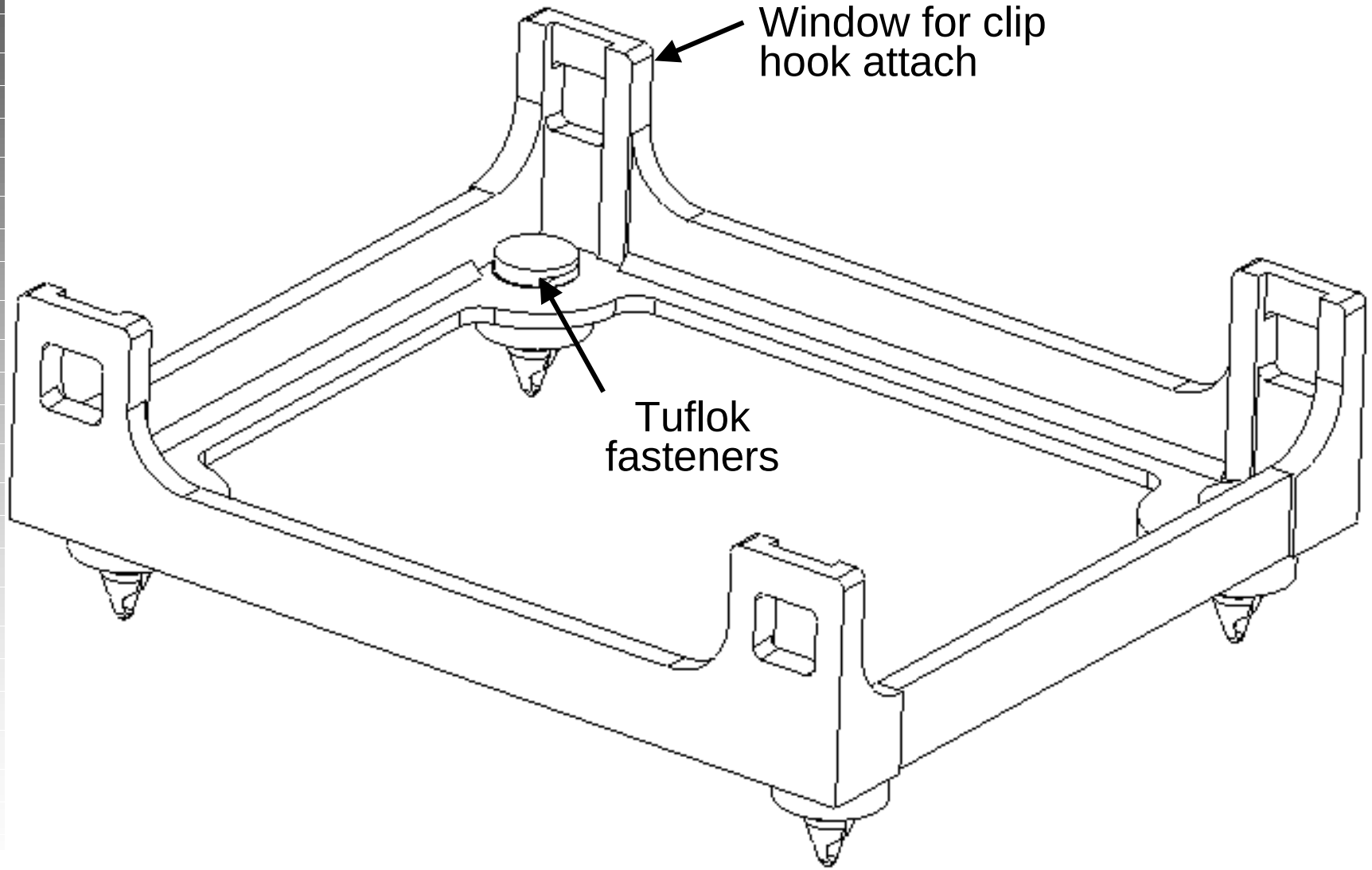
Intel® Pentium® 4 Processor in the µPGA Form Factor: Enabling Components



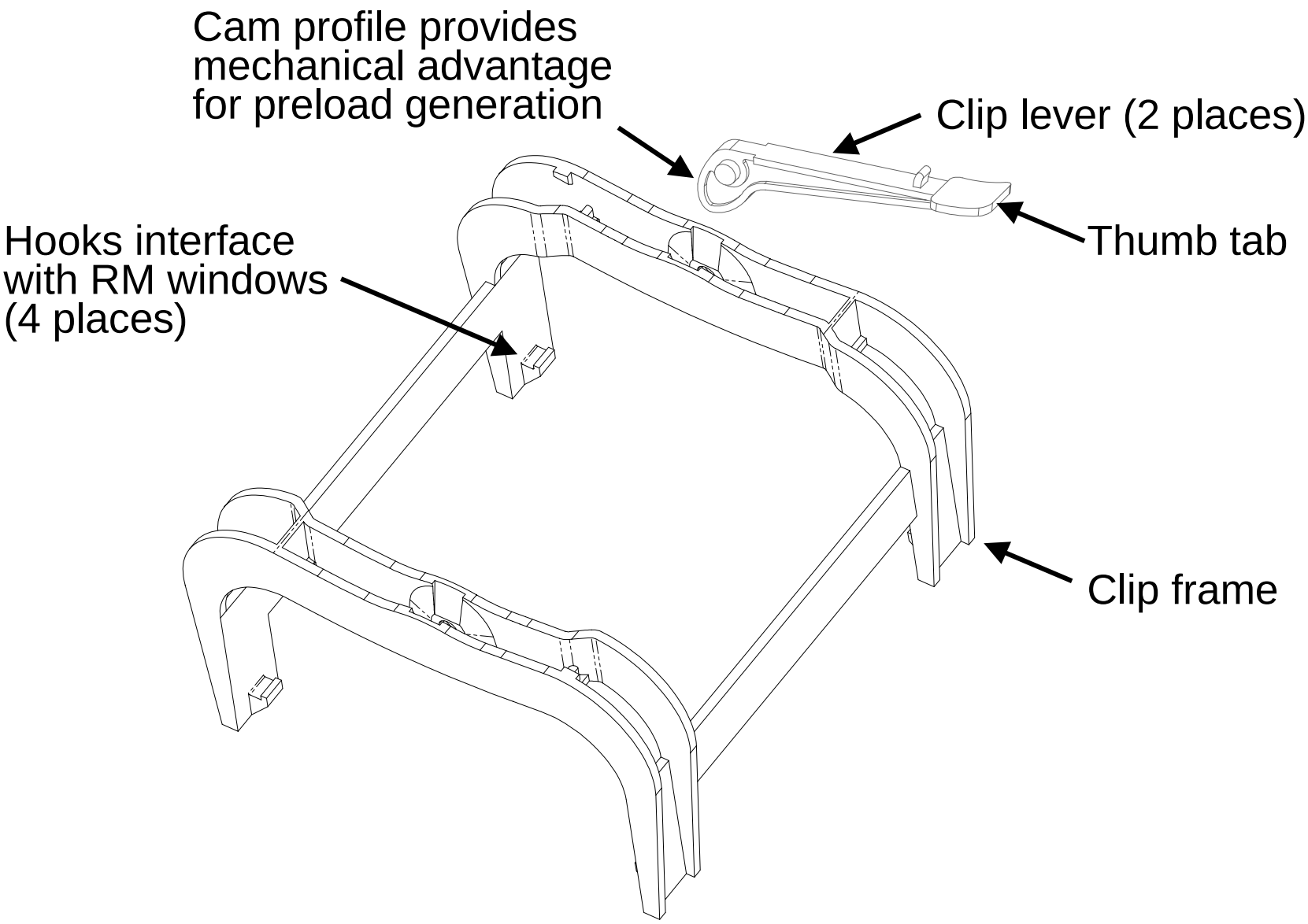
Reference Design: µPGA478 ZIF Socket



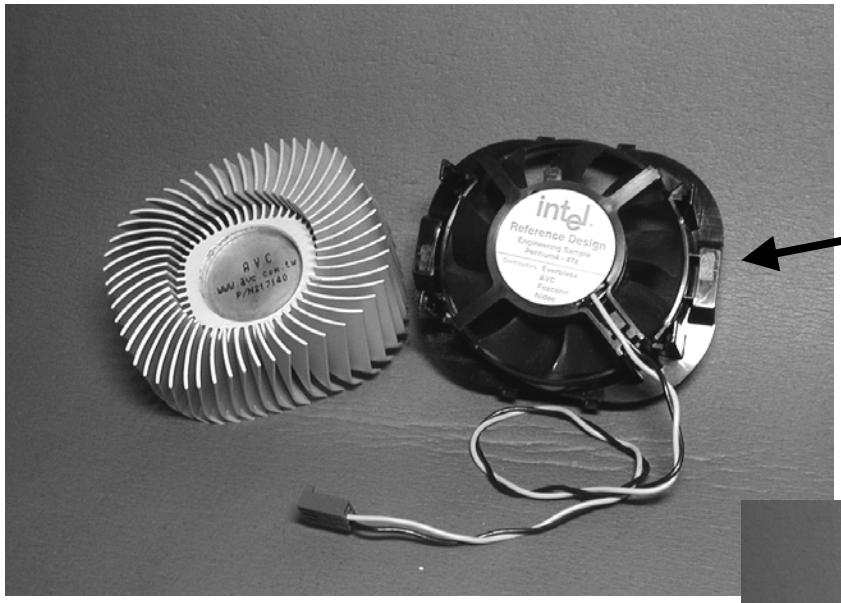
Reference Design: Retention Mechanism



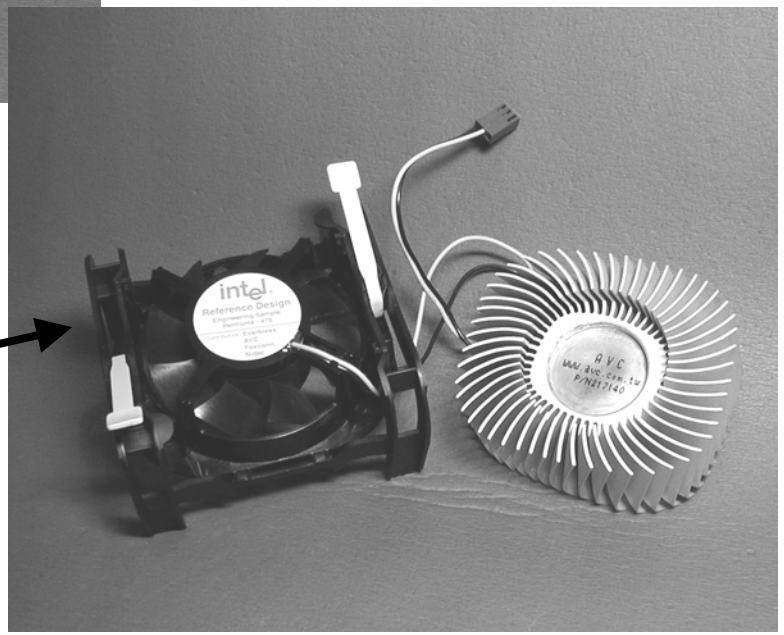
Reference Design: Heatsink Attach Clip



Reference Design: Heatsink and Fan Assy



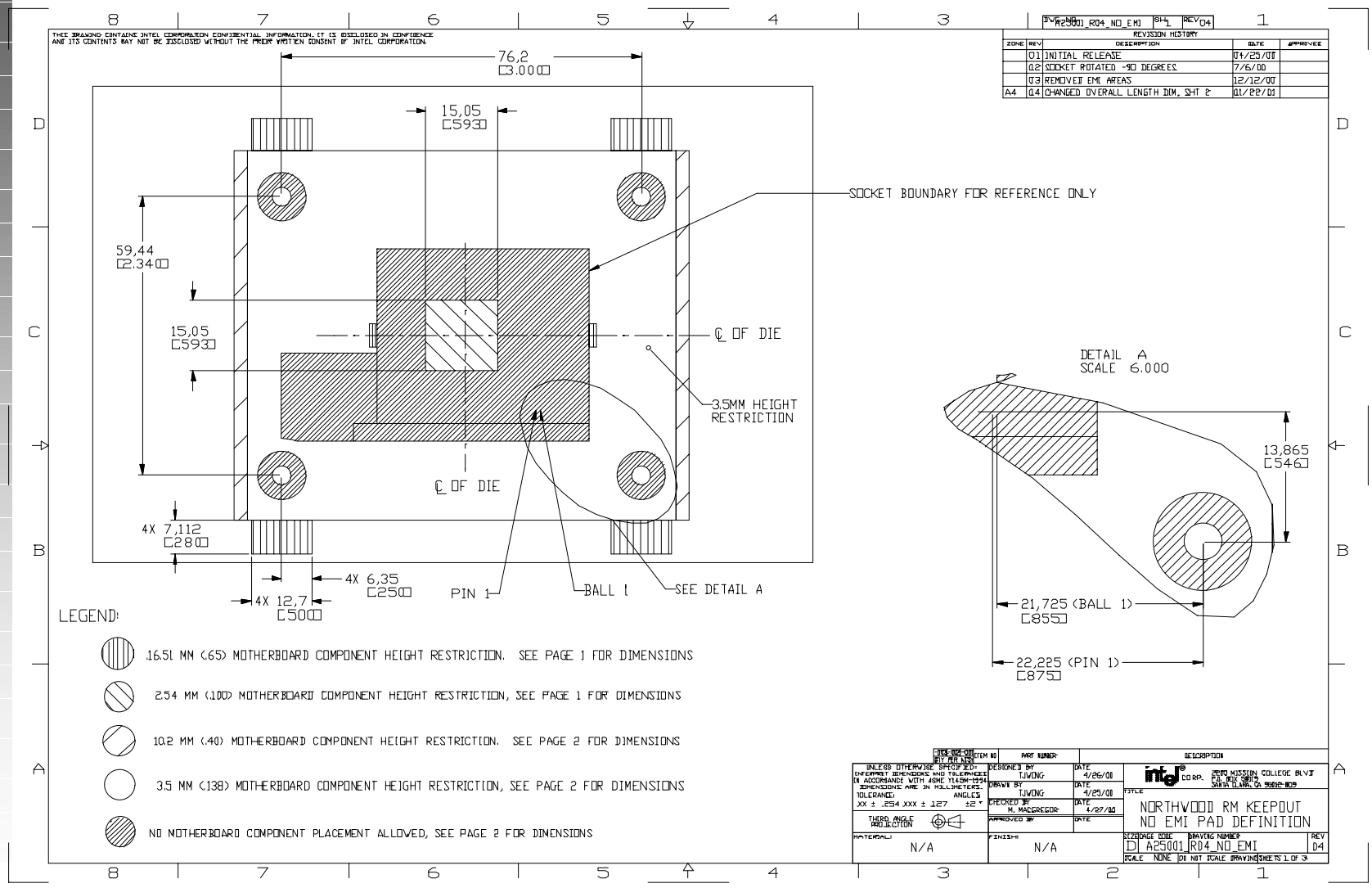
Fan & Shroud



Fan & Shroud Assembled into Clip

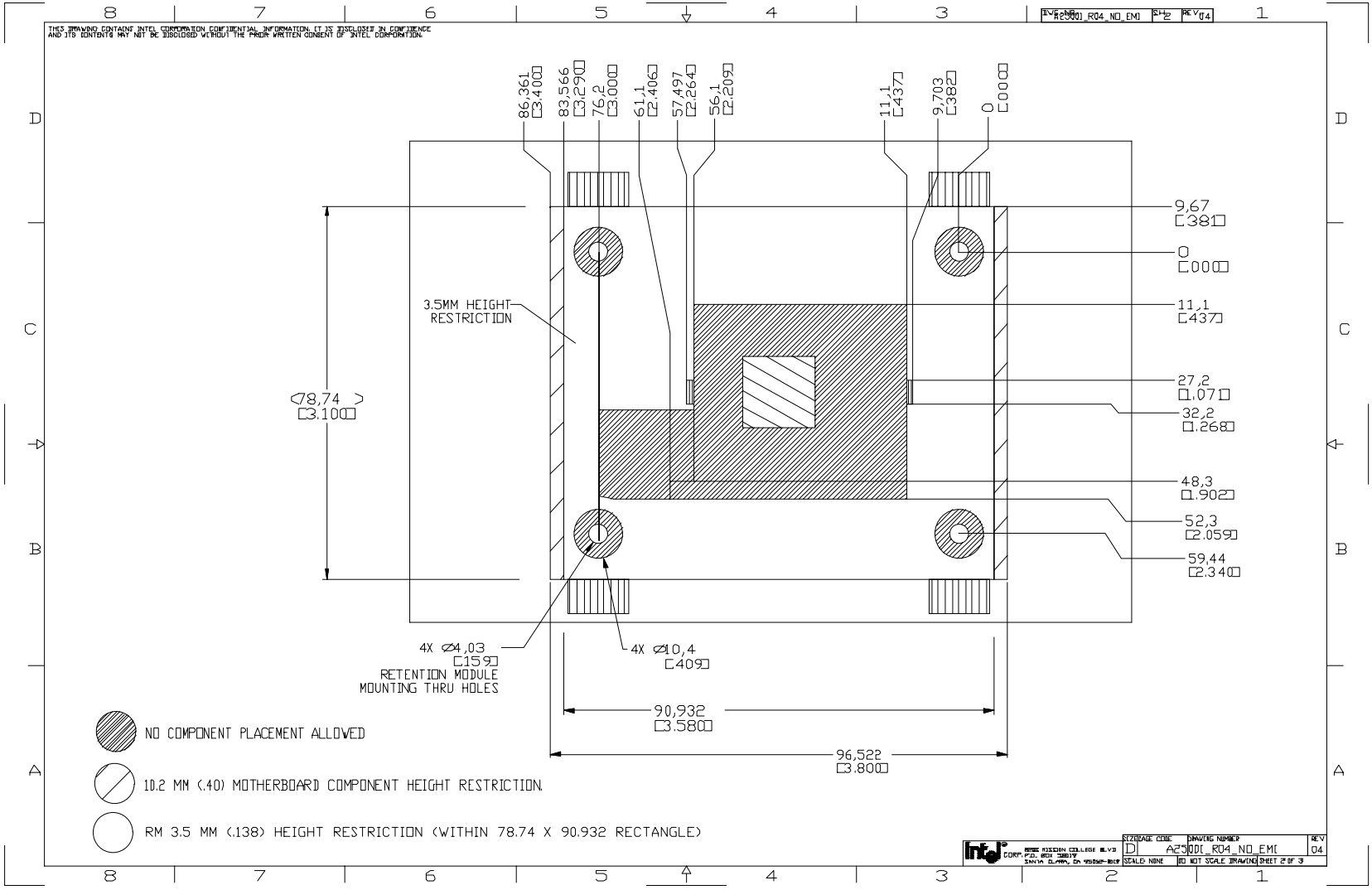
Reference Design: Motherboard Keep-out

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Reference Design: Motherboard Keep-out

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Intel Reference Design

Reference Design: Enabling Information

Updated supplier reference information is located at the following URLs:

For enabled support components:

– http://developer.intel.com/design/Pentium4/components/thermech.htm

And

For 478-pin sockets:

– http://developer.intel.com/design/Pentium4/components/478pin.htm

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